APPLICATIONS OF ERTS-A DATA COLLECTION SYSTEM (DCS) IN THE ARIZONA REGIONAL ECOLOGICAL TEST SITE (ARETS)

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Type I Progress Report
ERTS-A

a. TITLE: Applications of ERTS-A Data Collection System (DCS) in Arizona Regional Ecological Test Site (ARETS)

ERTS-A Proposal No. SR 184

b. GSFC ID No. of P.I.: IN 066

c. Statement and explanation of problems impeding progress of the investigation:

Analog cards for DCS platforms have not been received. Snow cover in Arizona Central Highlands may delay installation of DCS platforms in remote mountainous areas. Installation of DCS platform at snow water content measuring site in this area as late as mid March will still meet the principal experiment objective for this site, because measurement of rates of snow melt is of primary interest.

d. Accomplishments during reporting period:

Reassignment of personnel to support the investigation has been initiated. Power cables and interface equipment for DCS platform and additional digital water-level records have been received. Necessary repairs to the DCS test set have been completed and two platforms have been tested. One DCS platform and Stevens digital water-level recorder, modified for telemetry, was installed on the USGS gaging station on the Verde River near Camp Verde, Arizona. Data is being received from this station.

A second DCS platform and Stevens digital water-level recorder, modified for telemetry, has been installed on the USGS gaging station on the Black River near Point of Pines, Arizona and is on line.

The design has been completed and contracts issued for construction of two special fiber glass equipment shelters for use at meteorological and snow measurement sites.

e. Significant scientific results:

Preliminary analysis of DCS data from the USGS Verde River streamflow measuring site indicates the DCS system is furnishing high quality data much more frequently than had been expected. During the 43-day period between Nov. 3, and Dec. 15, 1972, 552 DCS transmissions were received during 193 data passes. On the average the DCS system furnished stream stage information about 4.5 times per day. The amount of data received far exceeded the single high quality transmission per 12-hour period expected from the DCS system.

The digital-parallel ERTS-A data has furnished data sufficient to accurately compute mean daily gage heights. These, in turn, are used to compute average daily streamflow rates during periods of stable or slowly changing flow conditions. The digital-parallel data has also furnished useful information during peak flow periods. However, the serial-digital DCS capability, currently under development for transmitting streamflow data, should provide data of greater utility for determining times of flood peaks.

f. - k. Nothing to report